REMARKS/ARGUMENTS

1. Claims 1, 3-29, and 31-34 remain in this application. Claims 2 and 30 have been canceled. Claims 35-41 have been withdrawn as the result of an earlier restriction requirement.

2. The Examiner has acknowledged that claims 29 and 31-34 are directed to allowable subject matter.

3. The Examiner states that the applicant's arguments in the last communication are not persuasive. The Examiner further states that the applicant provides no evidence aside from a blind assertion that the disclosed catalyst of the prior art would be inoperable when used with the disclosed support materials.

4. Applicant respectfully traverses Examiner's assertion. What Applicant respectfully submits, is that in column 3, lines 34-37 Dettling teaches that U.S. Pat. No. 4,299,734 discloses a carrier support of ZrO_2 in combination with at least one of CeO_2, MgO, or Fe_2O_3. Further, in column 2, lines 37-40 Dettling teaches that in the prior art it is known to stabilize alumina-supports with titania. However, disclosures are referenced by Dettling as prior art carrier supports which suffer from thermal degradation due to extended exposure to high exhaust gas temperatures (column 2, lines 25-29); the problem Dettling is trying to solve.

Accordingly, Dettling's invention is directed to a catalyst support carrier which overcomes thermal degradation. This, Dettling teaches, is a support carrier composed of ceria stabilized with ZrO_2 or La_2O_3. As such, the Examiner states that Dettling teaches a support of ceria and lanthana. Further, the Examiner suggests that due to Dettling's disclosures as described above it would have been obvious to one of ordinary skill in the art to use titanium, zinc or iron oxides in the support of Dettling.

However, that cannot be the case since Dettling by disclosing supports containing titanium, zinc, or iron oxides as the prior art which are not thermally resistant, then Dettling teaches that in the catalyst system of Dettling a carrier support comprising anything but ceria stabilized with ZrO_2 or La_2O_3 would suffer from thermal degradation. Therefore, using titanium, zinc or iron oxides in the support of Dettling would render Dettling's invention inoperable.

Furthermore, the present invention as defined by amended claim 1 is directed to a catalyst for converting NO_x in exhaust gases to NH_3 comprising at least one metal oxide impregnated with at least one noble metal, the metal oxide selected from the group consisting of Fe_2O_3, Cr_2O_3, MgO, ZnO, TiO_x, , a combination of Fe_2O_3 and La-γ–β-Al_2O_3, and a combination of Fe_2O_3 and CeO_2, the noble metal selected from the group consisting of Pt, Pd, Ir, Rh, and Ru. Dettling teaches only a combination of ceria and ZrO_2 or La_2O_3. This is not required in the present invention.

5. The Examiner submits that in making the argument in the prior communication applicant relies on a feature which is not recited in the claims, i.e., a support made of entirely TiOx. Applicant respectfully submits that amended claim 1 is directed to a catalyst for converting NO_x in exhaust gases to NH_3 comprising at least one metal oxide impregnated with at least one noble metal, the metal oxide selected from the group consisting of Fe_2O_3, Cr_2O_3, MgO, ZnO, TiO_x, , a combination of Fe_2O_3 and La-γ–β-Al_2O_3, and a combination of Fe_2O_3 and CeO_2, the noble metal selected from the group consisting of Pt, Pd, Ir, Rh, and Ru.

Accordingly, the metal oxide could be TiO_x or any of Fe_2O_3 or Cr_2O_3 or MgO or ZnO, or a combination of Fe_2O_3 and La-γ–β-Al_2O_3 or a combination of Fe_2O_3 and CeO_2. Therefore, the catalyst could be composed of TiO_x impregnated with one noble metal selected from the group consisting of Pt, Pd, Ir, Rh, and Ru. Applicant was trying to explain that a TiO_2-stabilized alumina support does not suggest a catalyst of TiO_x impregnated with one noble metal selected from the group consisting of Pt, Pd, Ir, Rh, and Ru.

6. Nguyen teaches that prior art references of U.S. Pat. Nos. 3,972,979 and 4,053,557 disclose "decomposition of halogenated hydrocarbons by oxidation over chromium oxide or a boehmite supported platinum" (column 1, lines 36-43). However, Nguyen further teaches that while the "foregoing references describe methods and compositions for treatment streams containing carbonaceous compounds and halogenated organic compounds, there is no recognition of any problems which arise during the treatment of emission streams particularly those containing halogenated organic compounds and non-halogenated organic compounds such as methane and benzene" (column 2, lines 35-42). The problems Nguyen refers to include the formation of certain compounds in the solid phase which cause plugging or blockage in process lines (column 2, lines 58-61). Accordingly, Nguyen states that "the present invention provides a solution to the aforesaid problems by offering methods and

catalytic compositions which oxidize non-halogenated and halogenated organic compounds while suppressing halogenation of other gas stream compounds such as methane and benzene with the oxidation products of the halogenated compounds" (column 2, lines 62-67).

The applicant was not asserting a new advantage, as the Examiner submits. The applicant was trying to show that Nguyen was differentiating over the prior art, and as such the materials of the prior art (i.e., chromium oxide) would not work with the system proposed by Nguyen, for reasons stated above, and therefore would necessarily render the invention of Nguyen inoperable.

Nguyen teaches a catalyst having an alkaline earth or rare earth metal oxides-stabilized alumina support impregnated with Pt. Suitable rare-earth metal oxides of Ca, Ba, Sr, Ra, La, Na, Ps, and Nd are disclosed. The present invention requires a combination of La-γ–β-Al_2O_3 and Fe_2O_3 which is not taught or suggested by disclosure of Nguyen of an alumina support stabilized with La.

7. The present invention as claimed in amended claim 1 is directed to a catalyst for converting NO_x in exhaust gases to NH_3 comprising at least one metal oxide impregnated with at least one noble metal, the metal oxide selected from the group consisting of Fe_2O_3, Cr_2O_3, MgO, ZnO, TiO_x, , a combination of Fe_2O_3 and La-γ–β-Al_2O_3, and a combination of Fe_2O_3 and CeO_2, the noble metal selected from the group consisting of Pt, Pd, Ir, Rh, and Ru. Neither Dettling nor Nguyen teach or suggest the present invention.

8. Accordingly, all claims being in order, applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

Anca C. Gheorghiu

DATE: April 8, 2003

Anca C. Gheorghiu
Attorney for Assignee
Reg. No. 44,120
Corning Incorporated
SP-TI-03-1
Corning, NY 14831
(607) 974-3322

ACG/cw